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Afrikanische Empididae (Dipt.)

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und

(Ergebnisse der Forschungsreise Lindner 1958/59 - Nr. 23)

By Kenneth G. V. Smith, London

With 29 Figures

Professor Dr. E. Lindner very kindly asked me to report upon the Empids taken by him during the German expeditions to South and East Africa. Some of the specimens taken belong to new species which I already have in manuscript based upon South African material collected by Mr. and Mrs. Brian Stuckenberg. These species will be described in my forth-coming monograph on the South African Empididae and Professor Lindner's specimens will be included in the type series. The specimens collected by Professor Lindner not conspecific with South African material are treated here and opportunity is taken to include some specimens from the same regions represented in collections of the British Museum (Natural History).

The only substantial published works on Empididae relative to the region under consideration are those of Becker (1914, 1915) and the British Museum's 1934/35 Ruwenzori Expedition by C. Garrett Jones (1940).

The subfamilies Tachydromiinae and Empidinae were not covered by Jones, but the papers of J. E. Collin (1930, 1938) describe a few species of the latter, and Collart (1934) describes some Tachydromiinae from the Belgian Congo. Speiser has also described a few species from German East Africa (1907) and Kilimandjaro (1910). A synopsis of the literature on the Ethiopian Empidid fauna is given in Smith (1967).

Unless otherwise stated all the material is in the Staatliches Museum für Naturkunde in Stuttgart.

Tachydromiinae

Drapetis (Crossopalpus) aenescens Wiedemann, 1830 (Außereur. Zweifl. Ins. 2, p. 649)

1 ♀, Tanganyika, Dar-es-Salaam, 18. XII. 1951–5. I. 1959. 1 ♂, 1 ♀, Tanganyika, Msingi, 22.–28. I. 1952. 3 ♂♂, 2♀♀, Tanganyika, Kware b. Moshi, 27. XII.–13. I. 1952 (1♂, 1♀ retained in British Museum [Natural History], London).

Collin (1960) has differentiated the species in the *aenescens* complex, but as he did not illustrate the male genitalia, I do so here (figs. 3 and 4) and provide a key to the species. The species in this complex are very close and the differences in the genitalia are very slight. However, as Collin points out, the occurrence of two of the species together in Palestine, Arabia and Egypt where they remain distinct, indicates that they are not forms of one species.

Key to the *aenescens* group of *Crossopalpus*

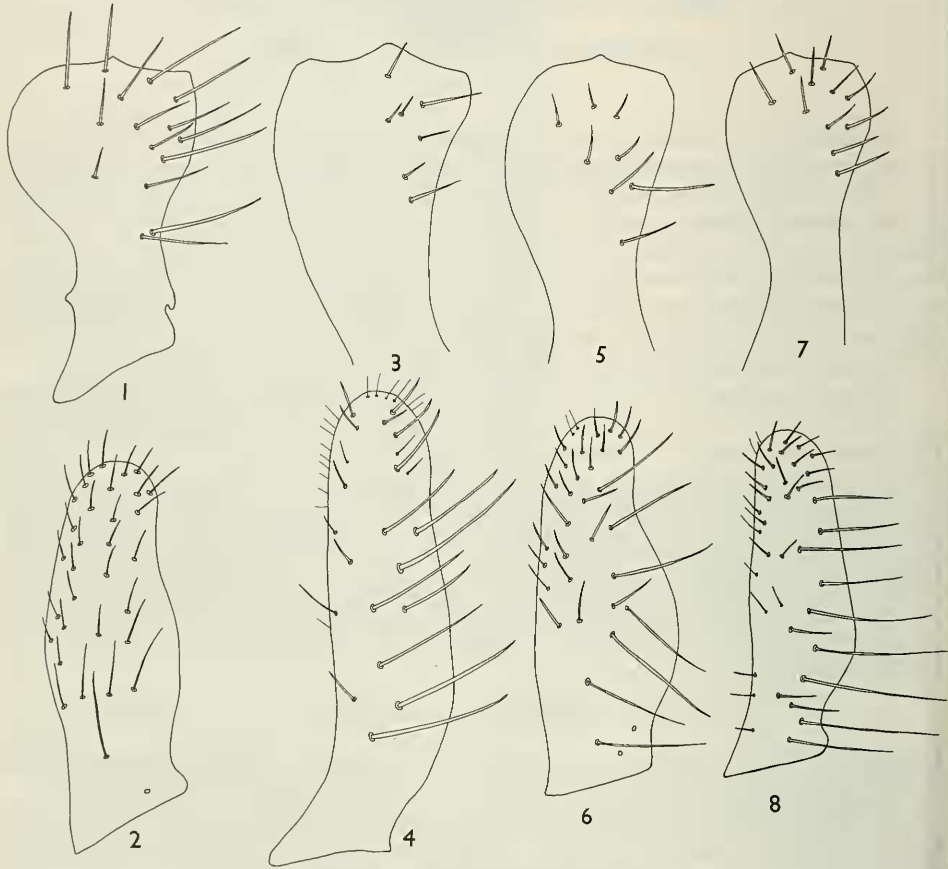
1 Third abdominal tergite without thickened hind-margin 2
— Third abdominal tergite with thickened hind-margin 3

2 Hind tibia with longer hairs above; ♂ genitalia large (details figs. 3 and 4) [South Africa] . . . . *aenescens* Wiedemann

— Hind tibia short haired above; ♂ genitalia small (details, figs. 1 and 2) [Egypt, Palestine, S. Arabia] . . . . *aenea* Walker

3 Hind femora with some longer anterodorsal bristly hairs; genitalia as in figs. 7 and 8 [Egypt, Palestine, Arabia] . . . . *subaenescens* Collin

— Hind femora with longer anterodorsal bristly hairs; hind tibiae with long pale hairs on all sides, all 2—3 times as long as tibia is thick; genitalia as in figs. 5 and 6 [S. India] . . . . *hirsutipes* Collin



Figs. 1—8. Genitalia details of *Drapetis* subgenus *Crossopalpus*. 1, 2, *D. (C.) aenea* Walker; 3, 4, *D. (C.) aenescens* Wiedemann; 5, 6, *D. (C.) hirsutipes* Collin; 7, 8, *D. (C.) subaenescens* Collin.

Drapetis (Crossopalpus) quadrispina Collart, 1934 (Bull. Ann. Soc. Ent. Belg., 74: 61)

1 ♀, Tanganyika, Kware b. Moshi, 27. XII. 1951—13. I. 1952.

Collart described this species from a female taken at Elizabethville, Belgian Congo and it has not been recorded since. The species may be distinguished at once by the two pairs of bristles on the anterior face of the hind tibia, near the tip. I have examined the type which has the vertical bristles a little weaker, but otherwise agrees with the present specimen in every respect.

Drapetis (Crossopalpus) sp.

1 ♀, Tanganyika, Mugango a. Victoria See, 19.–25. III. 1952.

This specimen appears to be conspecific with a South African species which I shall describe in my forthcoming monograph.

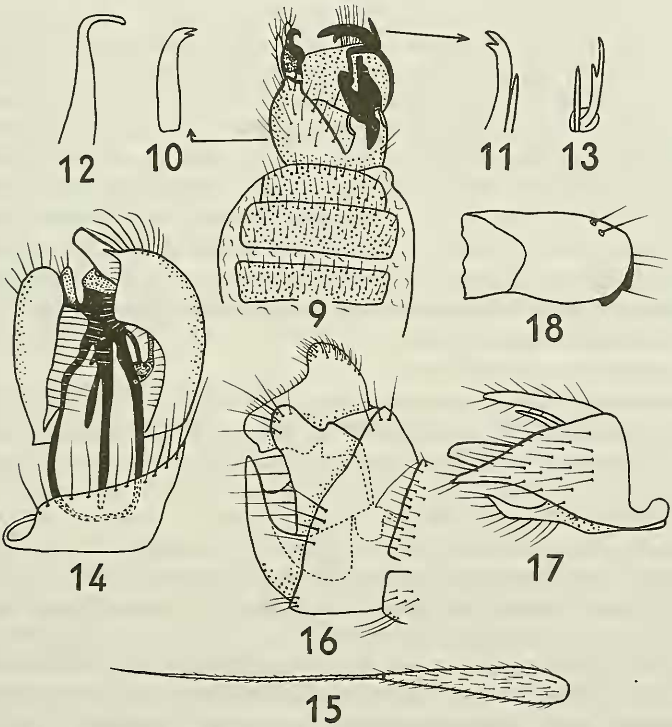
Platypalpus makoaensis **n. sp.**

1 ♂, Tanganyika, Makoa, 22.–23. II. 1952, holotype.

This yellowish species clearly resembles *P. aciculatus* Smith (1967) in having two narrow black thoracic central stripes fused outwardly from shortly before middle of thorax, with two broader lateral stripes. In my original description of *P. aciculatus* I was unable to describe the third antennal segment, which was missing. I have since seen further South African specimens collected by Mr. and Mrs. B. R. Stuckenberg and the third antennal segment is long, broadly reddish-yellow at base, darkened distally with a dark terminal arista which is a little longer than the third antennal segment. *P. makoaensis* differs only as follows.

Proboscis a little shorter, third antennal segment much shorter, narrowly yellow at base, dark distally and with the dark terminal arista about three times its length. The male genitalia differ as illustrated (figs. 9, 10, 11).

Length: body 3 mm, wing 3 mm.



igs. 9—14. Genitalia details of *Platypalpus* species. 9—11, *P. makoaensis* n. sp.; 12, 13, *P. aciculata* Smith in comparison; 14, *P. msingi* n. sp.

Fig. 15. Third antennal segment of *Platypalpus capensis* n. sp.

Fig. 16. Genitalia of *Empis adamsi* n. sp.

Figs. 17, 18. *Stenoproctus kilimanjaroensis* n. sp. 17, genitalia; 18, same, tip of basistylus.

latypalpus capensis **n. sp.**

2 ♀♀, South Africa, Kapstadt (Cape Town), Kirstenbosch, 26. XI. 1958, holotype paratype.

Head: black, dusted light greyish, more heavily so on frons, face and behind eye margins. Frons and face about as wide as an ocellus at narrowest point. A pair of weak divergent ocellar bristles and a pair of strong vertical bristles. Occiput with short brownish hairs above, some below neck and some long yellow hairs on lower half of head behind eyes. Antennae (fig. 15) black, third segment long and pointed and with a long white arista. Proboscis brown, about half head-height. Palpi short, dirty yellowish with yellow hairs and a strong apical bristle.

Thorax: reddish-yellow with two black stripes under line of dorsocentrals which broaden posteriorly, not coalescing on the midline, but spreading laterally over posterior calli. A lateral stripe on each side, merging with dorsocentral stripe anteriorly, runs back over humerus, along mesopleural — notopleural suture, under wing base to haltere from where it runs onto the black metanotum. Pleurae reddish-yellow below this stripe, dusted yellowish except for large bare shining patch on sternopleurae. Humerus with only a tiny hair. Acrostichals short, biserial; dorsocentrals uniserial becoming longer posteriorly and ending with a strong prescutellar; a strong notopleural with a hair below and a strong postalar. Scutellum black, dusted greyish, with a strong apical pair of bristles and a very weak outer pair.

Abdomen: blackish, lightly dusted yellowish above, brownish below, with short pale hairs.

Legs: yellow with yellowish hairs and bristles, tarsi more brownish. Front femora thickened, with a short anteroventral series of bristles and a posteroventral series which have strong bristles basally becoming weaker distally; mid femora very swollen, with weak anteroventral bristles, stronger posteroventral bristles, though none as long as femur is deep, and with a double series of setigerous tubercles ventrally on distal two-thirds which are replaced by normal bristles basally; hind femora long and slender with weak anteroventral bristles and some posterodorsal bristly hairs on basal half. Legs otherwise short haired, except for the usually ventrally setulose tibiae and tarsi of the raptorial mid legs, the mid tibiae having the ventral apical spur short and rounded.

Wings: very faintly brownish tinged with brown veins. Vein r_{4+5} bowed forwards beyond middle so that it bends down towards m distally. Vein m is gently bowed backwards beyond middle. Halteres black.

Length: body 3 mm, wing 3 mm.

This species resembles *P. aciculatus* Smith in the broad stripes on the thoracic disc, but is distinguished by the additional lateral stripes, the black antennae with the long third antennal segment and white arista and the longer proboscis.

Platypalpus msingi **n. sp.**

Holotype ♂, Paratypes 2 ♂♂, 2 ♀♀, Tanganyika, Msingi, 1.–19. V. 1952. 1 Paratype ♂ retained in the British Museum (Natural History), London.

♂: Head: black, shining on upper two-thirds of frons and upper half of occiput, otherwise dusted light greyish. Frons narrowing from two ocellar widths at level of front ocellus to a little more than one ocellar width just above antennae. Face as wide as lowest width of frons, a weak pair of ocellar bristles. Two pairs of strong black vertical bristles, inner pair slightly convergent, outer pair divergent. Occiput with black bristly hairs above and pale haired below. Antennae brown, third segment pointed, nearly twice as long as first and second segments together; terminal arista nearly twice length of third antennal segment. Proboscis short, about one-third head-height, dark brown. Palpi yellow, short, with a rather dense fringe of pale hairs at tip and a strong black bristle.

Thorax: shining black with 3 narrow bands of light grey dust under acrostichals from level of upper notopleural bristle and under dorsocentrals from level of hind margin of humeri back to the densely dusted prescutellar depression; anteriorly this band

of dust is continued transversely behind each humerus to join a broader lateral band of dust running under the notopleural bristle backwards over the posterior callus. Front of prothorax from anterior margin of humeri down to over prothoracic sternum dusted greyish. Pleurae black, completely dusted greyish except for a shining black sternopleural spot. Bristles black. Acrostichals biserial; dorsocentrals uniserial, ending in a strong prescutellar; a weak humeral hair, a strong notopleural with a weaker bristle below; a strong postalar with a hair each side. Scutellum black, dusted greyish with a pair of strong crossing apicals and a weak outer pair.

Abdomen: dark glossy blackish-brown above, only dusted on narrow anterior band on tergites; short yellow haired, longer haired at sides. Genitalia (fig. 14) dark blackish-brown.

Legs: yellow, basitarsi brownish at tip, other tarsal segments brownish. Coxae with yellow bristles and hairs. Front femora moderately swollen with slender yellow antero- and posteroventral bristles. Mid femora very swollen with black anteroventral and stronger black posteroventral bristles, though none as long as femur is deep; two or three black anterior bristles distally; and a double row of black points beneath for almost the entire length of the femur, only being replaced by bristles at the extreme base. Hind femora slender with a series of weak anteroventral bristles. Front tibiae obviously thickened, with strong black anterodorsal bristles; slender anteroventral and posteroventral bristly hairs which are long distally. Mid tibiae curved, setulose beneath and with a long pointed ventral apical spur which is yellow on the basal half and black on the distal half. Hind tibiae with weak anterodorsals and very weak anteroventrals. Front tarsi long haired posteroventrally. Legs otherwise short haired.

Wings: very faintly brownish tinged, veins brown. Vein r_{4+5} bowed so that it bends gently downwards distally towards vein m which is almost straight. Halteres yellow.

♀: Similar to male except for abdominal terminalia which, including the two preceding segments, are dulled by heavy dust.

Length: body 3 mm, wing 3 mm.

The most distinguishing features of this species are the head being dusted on the lower half and shining black on the upper half, the pattern of the thorax and the strong anterodorsal bristles on the thickened front tibiae.

Platypalpus gracilipes **n. sp.**

1 ♀, Tanganyika, Kilimanjaro, S.W., 3000 m, 31. I. 1959, holotype.

Head: black, lightly brownish dusted. Frons narrowing from a little more than width of an ocellus to about half this width below; face linear. Ocellar bristles weak, slightly convergent. A pair of strong slightly convergent vertical bristles which are rather sharply bent forward beyond middle instead of the more usual gentle curve forwards. Occiput dark haired. Antennae black, third segment long and pointed ending in a long white arista, similar to *P. makoaensis*. Proboscis brown, short, less than half head-height. Palpi small, yellow, with long bristly hairs.

Thorax: shining black, except for a narrow lateral band of dust over humeri and notopleural depression. Acrostichals weak, biserial, dorsocentrals all weak. One or two hairs on humeri, a single notopleural bristle and a long slender postalar; otherwise only a few weak hairs behind humeri and above postalar calli. Scutellum black, lightly yellowish dusted, with a pair of crossing apical bristles. Pleurae blackish, lightly yellow dusted; sternopleuron polished except for dust along upper margin.

Abdomen: shining dark brown with last segment and anal papillae dulled by yellowish dust; short sparse brown hairs, longer laterally.

Legs: yellowy brown. Front femora only slightly swollen, in basal half; with weak anteroventrals and only slightly stronger posteroventrals except for rather long slender bristle near base. Mid femora slightly swollen, with slender anteroventrals and antero-

dorsals; strong black posterodorsals obviously longer than femur is deep; setae arising from double row of ventral tubercles becoming comparatively long basally. Hind femora slender with distinct though slender anteroventral bristles and weak posteroventral bristles, a few slender anterodorsals at base. Front tibiae with some weak, spaced posterodorsals; mid and hind tibiae with similar antero- and posterodorsals; none of these tibial bristles is distinct and only stand out from the hairs in certain positions as the legs are slowly rotated. Tarsi bristly below.

Wings: faintly yellowish tinged anteriorly, almost clear posteriorly. Vein r_{4+5} gently and evenly bowed forwards. Vein m more strongly bowed backwards, but straightening out again towards tip.

Length: body 2.5 mm, wing 3.8 mm.

This species is quite distinct with its slender build and long wings, polished thorax, lack of strong prescutellar dorsocentrals, and only slightly swollen mid femora.

Platypalpus sulcolanata n. sp.

1 ♀, Tanganyika, Ngerengere, 23. XII. 1951, holotype.

Head: black dusted greyish. Frons parallel sided, about twice ocellar width. Face about width of an ocellus just below antennae, widening below. Ocellar bristles strong and divergent. A pair of strong convergent vertical bristles. Occiput with moderately long pale hairs, fairly evenly distributed. Antennae dark brown, third segment short, pointed and with a pubescent apical arista a little more than twice as long as third antennal segment. Proboscis brown, about two-thirds head-height. Palpi yellow, short and broad, ovate with an apical bristle.

Thorax: brown, lightly greyish dusted. Acrostichals weak, irregularly quadriserial; dorsocentrals a little longer, uniserial, ending in a strong prescutellar; a slender humeral with a hair in front and some hairs in intra-humeral position; a strong notopleural with a weaker bristle below; some hairs in supra-alar position; a postalar bristle and one or two hairs. Scutellum brown, with a pair of strong crossing apical bristles and a very weak outer pair. Pleurae with light greyish tomentum; sternopleuron shining anteriorly, with greyish tomentum on upper hind corner, but on posterior margin the tomentum becomes short pale pubescence and along the anterior margin of the hypopleuron is a regular series of adpressed pale pubescence the tips of which are level along the margin of the suture. The two areas of pale pubescence either side of the sternopleural — hypopleural suture appear alternately as narrow short shimmering stripes with shifting illumination under a low magnification, the non-shimmering side having the appearance of a narrow black line due to the curvature of the sclerites.

Abdomen: brown, darker along hindmargins of tergites, only very lightly dusted, shining, tergites 5 and 6 heavily pale dusted on narrow hind margins and remaining segments and anal papillae completely dulled by heavy pale dust. Short pale haired, longer at sides.

Wings: faintly yellowish tinged, almost clear posteriorly, veins brownish. Vein r_{4+5} almost straight, gently bent down towards vein m near tip. Vein m bowed backwards about middle so that it approaches r_{4+5} distally, but straightens out to end parallel with this vein at tip. Halteres yellow.

Legs: yellow, only last tarsal segment on all legs brownish, bristles and hairs yellow. Front femora moderately swollen and with slender antero- and posteroventral bristles. Mid femora moderately swollen with slender anteroventral bristles and long posteroventral bristles, some slightly longer than femur is deep at middle, and a double row of setigerous tubercles below. Hind femora slender, with a series of weak anteroventral bristles, even weaker posteroventrals, a series each of slender antero- and posterodorsals on basal half. Front tibiae somewhat thickened in basal half and with

some weak anterodorsals on distal half. Spur on mid tibiae long and pointed with blackish tip. Hind tibiae with a weak preapical anterodorsal. Legs otherwise without distinct bristles except for the circlets about tips of femora.

Length: body 2.75 mm, wing 3.1 mm.

This species closely resembles *P. innocuus* in having the moderately swollen mid femora with their long posteroventral bristles and the parallel sided frons, but is easily distinguished by pale hairs on the posterior margin of the sternopleuron and anterior margin of the hypopleuron and the yellow first and second antennal segments.

The name of this species means woolly-grooved with reference to the pubescence on the sternopleural-hypopleural suture.

Platypalpus innocuus **n. sp.**

1 ♀, Tanganyika, Kibo West, 2800 m, 17.–22. IV. 1952, holotype.

Very similar to *P. sulcolanata* and only differing as follows:

First and second antennal segments yellow. Thorax, except for the prothoracic metasternum darker brown, blackish on disc; sternopleuron mostly shining with tomentum on upper and anterior margins, the posterior margin is bare on the lower two-thirds right up to the suture separating the hypopleuron.

The species of *Platypalpus* now known to occur in East Africa may be separated by the following key.

Key to known East African *Platypalpus**

1	Thorax partly reddish-yellow	2
—	Thorax brown or black	3
2	Mesonotum glossy reddish-yellow. Scutellum black	*latericia* Becker
—	Mesonotum reddish-yellow with black stripes	*makoaensis* n. sp.
3	Arista white	4
—	Arista dark	5
4	Mesonotum dusted	*podocarpi* Becker
—	Mesonotum shining black. Mid femora only slightly swollen	*gracilipes* n. sp.
5	Mesonotum completely greyish/brownish dusted	6
—	Mesonotum partly shining black	*msingi* n. sp.
6	First and second antennal segments yellow	*innocuus* n. sp.
—	Antennae entirely black	7
7	Blackish species with front femora blackish above	*commendata* Becker
—	Brownish species with yellow legs	*sulcolanata* n. sp.

Hybotinae

Syndyas sp.

1 ♀, Tanganyika, Pare Gebirge, 1700–2000 m, 2.–6. VI. 1952.

This specimen is without a wing stigma and has longer thoracic and abdominal hairs than any of the females described by Jones (1940) or Loew (1856–8, 1860). However, I prefer not to describe it without further specimens including associated males.

Ocydromiinae

Stenoproctus kilimanjaroensis **n. sp.**

1 ♂, Tanganyika, Kilimanjaro, 31. I. 1959, 3000 m, holotype.

Head: black, slightly yellowish dusted. Eyes almost touching about middle above antennae, face about twice width of an ocellus. Occiput with weak yellowish postocular

* *P. capensis*, described above, is a South African species, and is not therefore included in this key.

bristly hairs and with stronger yellowish bristly hairs behind, a few above and many on lower half of head. Ocellar triangle prominent with a pair of ocellar bristles and some weaker bristly hairs behind. Antennae dark brownish; third segment about $2^1/_2$ times as long as it is broad at its broadest point; arista apical, $2^3/_4$ times length of third antennal segment, short pubescent. Proboscis yellowish short, projecting forwards, its tip about in line with tip of second antennal segment, bristly below. Palpi brownish, a little shorter than proboscis and with some quite strong bristles.

Thorax: shining black with humeri and postalar calli yellow. Acrostichals hair-like, irregularly quadriserial about middle, but more biserial anteriorly and posteriorly. Dorsocentrals uniserial a little longer than the acrostichals and last two bristles in each series long and strong; a strong humeral, with numerous bristly hairs in front; a strong posthumeral, a strong notopleural, a strong supra-alar and one or two postalars. There are numerous hairs between each humerus and the anterior dorsocentrals. Scutellum dark brown on disc, yellow on lateral corners, with three distinct pairs of marginal bristles and some bristly hairs between. Pleurae shining dark brownish on discs of sclerites, more or less yellowish about sutures.

Abdomen: brown, lightly yellowish dusted, short sparse yellow-haired above and with longer yellow hairs laterally, venter yellowish. Genitalia (figs. 17, 18) brownish.

Wings: faintly brownish-tinged; stigma pale brown, shallow, about half of depth between costa and r_{2+3}. Halteres black.

Legs: yellow with hind femora, tibiae and last four tarsal segments on all legs more brownish. Coxae on anterior face with bristly hairs and a few bristles below, hind coxae with bristles and bristly hairs on posterior face also. Hind trochanter with one or two bristles above. Front femora without bristles except about tip; mid femora without bristles except about tip, but with some longer bristly hairs on anterior face in basal half. Hind femora with an anterodorsal bristle at distal four-fifths and a row of 4 or 5 bristles a little below on distal half of anterior face; a row of 5 or 6 anterior bristles in distal half to two-thirds; a row of posteroventral bristles on distal half; and two rows of tuberculate spines below on distal half. Tibiae rather long haired with a circlet of bristles about tips on front and mid legs, hind tibiae with a ventral series of tuberculate bristles. Tarsi rather long-haired, basitarsi on all legs densely haired below and on hind legs with some slender bristles above.

Length (body): 5 mm.

This species resembles both *S. maximus* Jones and *S. securus* Jones in having a long arista (twice or more as long as third antennal segment). However only *S. maximus* has strong posterior dorsocentrals, but has the hind femora half black and half yellow without any anterodorsal bristles. I have examined the types of all Jones' *Stenoproctus* in the British Museum (Natural History).

Empidinae

Empis (Empis) adamsi **n. sp.**

1 ♂, 2 ♀♀, Tanganyika, Msingi, 1.–19. V. 1952, holotype.

♂: Head: blackish, dusted greyish to brownish, eyes contiguous for long distance above, the upper facets enlarged. Frons reduced to a small triangle above antennae. Face rather short and a little broader than greatest depth of third antennal segment. Ocellar triangle prominent with a pair of rather erect, forwardly curved, crossing bristles, with some hairs behind. Occiput with black hairs of moderate length in postocular row, but a little longer behind. Antennae black, third segment broad at base then rather suddenly narrowed and tapering towards tip, more than twice length of first and second segment together; terminal style black, half length of third antennal segment. Proboscis dark brown, a little longer than head is deep, labellae short haired. Palpi black with a terminal bristle.

Thorax: blackish, dusted greyish to brownish, heavily so on prescutellar depression. Bristles black. Acrostichals biserial, shorter than distance separating them from dorsocentrals; dorsocentrals biserial anteriorly, about as long as distance separating them from acrostichals, but becoming longer and stronger posteriorly. A humeral with several hairs in front; an intra-humeral; a posthumeral with two hairs in front; three notopleurals in an oblique row, middle bristle the strongest and with some hairs in front; two supra-alars; a postalar with a hair in front. Scutellum black, heavily greyish dusted with a pair of crossing apical bristles. Pleurae black, dusted greyish. Prothoracic metasternum with a few bristles on upper outer corner, collar with a bristle on each side, episternum bare. Pleurae bare except for about 10 bristles and bristly hairs on metapleuron.

Abdomen: blackish-brown, dusted greyish with moderately long dark hairs. Genitalia (fig. 16) blackish.

Wings: greyish. The discal cell (1st M_2) is shorter than the two upper veins issuing from its end, but a little longer than the lowest vein. Upper branch of r_{4+5} rather steep, a right angle at base, but bending towards wing tip distally. Anal vein (a_1) faint and not reaching wing margin. Halteres black.

Legs: dark brown. Coxae lightly greyish dusted, dark-haired. Front femora with slender anteroventral bristles, rather long towards base and some weak posteroventrals towards base. Mid femora with a series of long, strong anteroventral bristles, some twice as long as femur is deep and some shorter posteroventrals; rather long haired anteriorly. Hind femora with rather long slender anteroventrals, rather long haired in front and behind. Front tibiae with anterodorsal bristles which become longer towards tip; a circlet of bristles about tip, longer haired behind. Mid tibiae with two long anterodorsal bristles, one at basal quarter and one at distal twothirds; a weak posterodorsal at basal quarter; some anteroventrals, longest about middle, and shorter posteroventrals; a circlet of bristles about tip, longer haired anteriorly. Hind tibiae thickened at tip; with long anterodorsals; shorter posterodorsals except for long preapical; much shorter slender antero- and posteroventrals. Front and mid tarsi with bristles around tips of segments, bristly hairs above and dense hairs below; hind basitarsi thickened, bristly haired above and with a pair of long bristles above at middle and another pair at tip, bristly below, remaining segments longer haired above.

♀: Similar to male, but eyes broadly separated, the facets of uniform size. Abdominal terminalia with long papillae. Wings brown. Legs without strong bristles, but short pennate above hind femora from near base to about distal four-fifths and shorter pennate below from about basal third nearly to tip. Hind tibiae with weak antero- and posterodorsals.

Length (body): 3 mm.

Most of the *Empis* described from Africa have belonged to the subgenus *Coptophlebia* (see SMITH 1967). I have not yet ascertained the subgeneric status of *E. validus* Adams (1905) described from Rhodesia, but it is easily distinguished from *E. adamsi* by the partly yellow tibiae. BECKER (1914, 1915) described *E. subnitida* from a male taken on Mount Kenya, but the eyes are separated and the legs are without the strong bristles of *E. adamsi*.

The following two species have both branches of the discal vein (m) abbreviated, but are referred to *Coptophlebia* which has only the upper branch of vein m abbreviated.

Empis (Coptophlebia) lindneri **n. sp.**

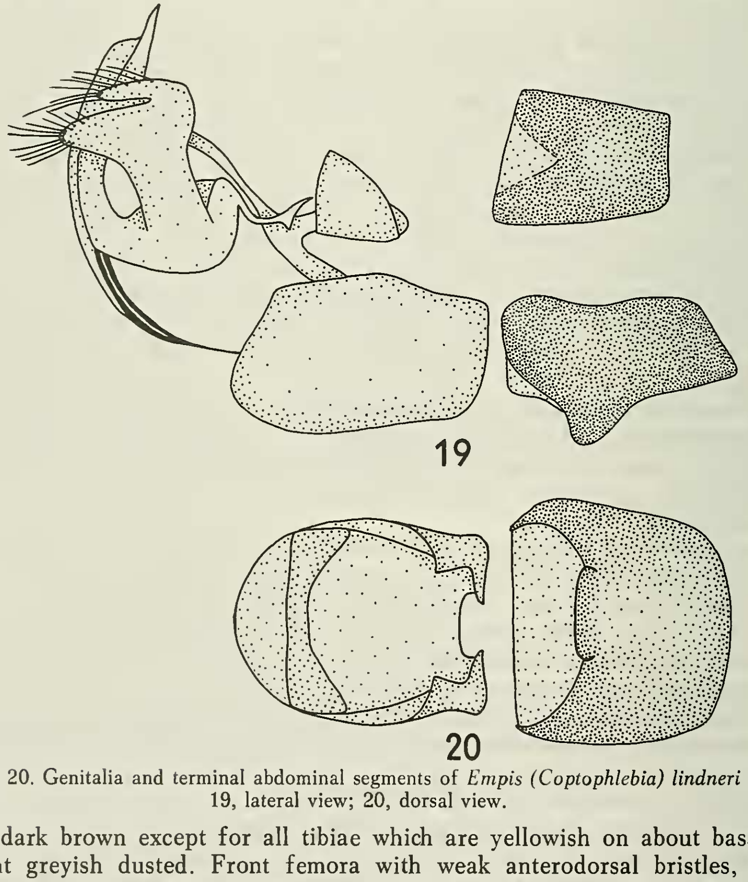
1 ♂, Tanganyika, Msingi, 9.–17. VI. 1952, holotype.

Head: eyes contiguous for short distance above antennae about middle of frons, but widely separated below antennae; upper facets enlarged. Face dusted greyish above but shining black on lower half. Occiput dusted greyish with a postocular series of bristly hairs, curved over eye above and with a stronger row of bristles behind.

Antennae blackish, first and second segments short, third segment lanceolate, about twice as long as broad; terminal style a little more than half length of third antennal segment. Proboscis light brown, a little less than twice as long as head height. Palpi yellow with a few dark hairs below.

Thorax: dark, but rather heavily brownish to greyish dusted with 3 darker stripes under the lines of acrostichal and dorsocentral bristles. Prothoracic collar with long bristly hairs in about 3 rows in lateral view. Prothoracic sternum hairy above. Humeri with numerous rather long bristly hairs and a slender bristle. Acrostichals rather long, biserial. Dorsocentrals irregular, in about 3 rows at middle, but merging with hairs, anteriorly to humeri and posteriorly across anterior margin of prescutellar depression, longer behind and ending in a stronger prescutellar bristle. Two strong notopleural bristles and numerous hairs. A strong supra-alar bristle with a series of 4 bristly hairs in front. A weak postalar present. Scutellum dull blackish, yellowish dusted around margins and with a pair of strong, crossing apical bristles. Pleurae yellowish dusted. Metapleurae with about 25 long bristles and strong hairs.

Abdomen: dark brownish, lightly dusted, with long lateral hairs at base otherwise with short black hairs. Genitalia (figs. 19, 20) with pregenital tergites and sternites curiously modified as usual in those species of *Coptophlebia* having both branches of discal vein abbreviated. Sixth sternite with a broad median projection.



19

20

Figs. 19, 20. Genitalia and terminal abdominal segments of *Empis (Coptophlebia) lindneri* n. sp. 19, lateral view; 20, dorsal view.

Legs: dark brown except for all tibiae which are yellowish on about basal half, coxae light greyish dusted. Front femora with weak anterodorsal bristles, slender anteroventral and ventral bristly hairs and 3 slender posteroventral bristles at tip; mid femora similarly bristled, but shorter haired behind; hind femur with some postero-ventral bristly hairs and apparently with some stronger anterodorsal bristles, though

these have been knocked off the only hind leg present in the type. Front tibiae with short anterodorsal bristles, stronger posterodorsal bristles and a circlet of strong bristles about tip and some long bristly hairs below and rather more densely short haired ventrally and distal half. Mid tibiae with rather strong antero- and posterodorsal bristles, a circlet of strong bristles about tip and rather densely short-haired below distally. Hind tibia with antero- and posteroventral bristles, posterodorsal bristles and a double series of anterodorsal bristles; rather densely short haired below towards tip. Tarsi with some long bristles above and below.

Wings: clear, veins light brown. The wings are rather damaged, but the lower branch of the discal vein (m) is distinctly abbreviated indicating that this species belongs to the group of *Coptophlebia* with both branches abbreviated since normally it is only the upper vein that is so affected. Upper branch of cubital fork straight forming a right angle with the lower branch. Anal vein faint. Halteres dirty yellowish.

Length (body): 4.5 mm.

Empis (Coptophlebia) chrysocera Collin (1929) from Tanganyika has both branches of the discal vein abbreviated, but in that species the third antennal segment is yellow, the legs completely black and it differs in other characters including the structure of the genitalia. COLLIN (1938) has since described two further West African species in which both branches of the discal vein are abbreviated. Several other undescribed species occur in Africa and the author will give a full treatment of this group of *Coptophlebia* elsewhere.

Six specimens collected by Prof. LINDNER are conspecific with a species I have had separated for some time in the British Museum (Natural History) Collection:

Empis (Coptophlebia) lyra **n. sp.**

1 ♂, Holotype, Kenya, Kwali Forest, 20 mls W. of Mombasa, 1. VI. 1948, Miss M. STEELE (in British Museum [Natural History], London, B. M. 1948—347). Paratypes 2 ♀♀, same data as above (also in British Museum); paratypes 2 ♂♂, 4 ♀♀, Rhodesia, Livingstone, 16.—20. XI. 1958 (E. LINDNER) (in Staatliches Museum, Stuttgart, except for 1 ♀ retained in British Museum).

♂: Head: black, dusted greyish. Eyes contiguous above antennae, upper facets enlarged. Face broad, rather heavily dusted greyish, but shining black above mouthedge. Ocellar triangle prominent with strong ocellar bristles. Occiput with straight postocular bristles and a few short sparse hairs behind. Antennae yellow, third segment rather long and narrowed at tip. Proboscis light brown, about twice as long as head height. Palpi very small, yellow, and with a black bristle below.

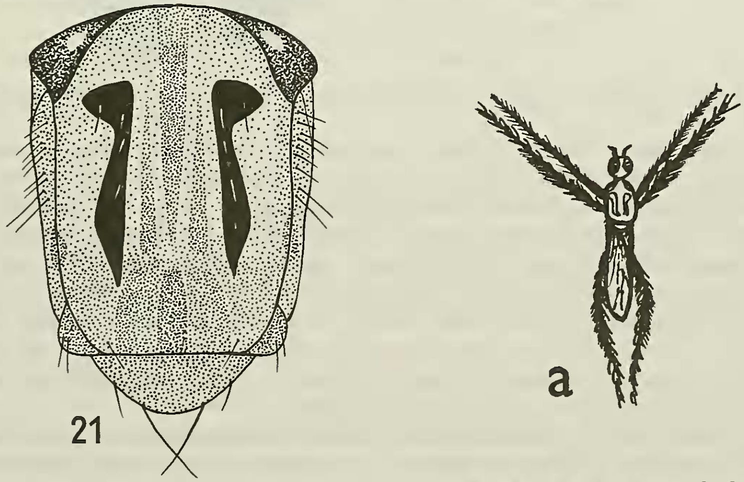
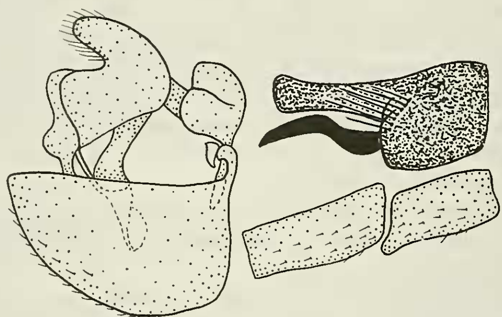


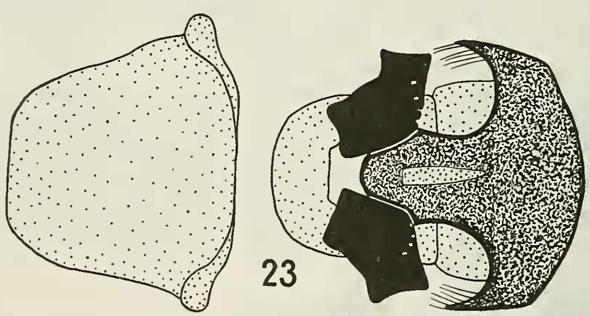
Fig. 21. Mesonotum of *Empis (Coptophlebia) lyra* n. sp., inset (a) resting position of adult fly.

Thorax (fig. 21): dark, but heavily dusted light grey with a very narrow indistinct median stripe and a broad distinct black stripe under each line of dorsocentrals. Humeri brownish, shining; viewed from above under low magnification the broad lateral markings give a lyre-shaped effect standing out starkly against the pale grey thoracic dust. Thoracic collar with a line of bristly hairs. Prothoracic sternum with a few bristly hairs at upper hind margin only. Humeri with a single bristle with one or two tiny hairs in front. Acrostichal bristles biserial, dorsocentrals biserial, dorsocentrals biserial bending out to humeri uniserial anteriorly, longer posteriorly, ending with a fairly strong prescutellar bristle. Two strong notopleural bristles with some hairs in front; a supra-alar and a postalar. Scutellum brownish with a pair of short, but strong crossing apicals and a weaker bristles outside. Pleurae brownish, lightly greyish dusted. Metapleuron with about 15 bristles and hairs.

Abdomen: brownish, somewhat shining though lightly dusted and with the first tergite somewhat paler at sides. Genitalia (figs. 22, 23) with pregenital tergites modified.



22



23

Figs. 22, 23. Genitalia of *Empis (Coptophlebia) lyra* n. sp.; 22, lateral view; 23, dorsal view.

Legs: dark brown. Front femora short haired; mid femora missing; hind femora pennate posteroventrally on distal quarter and anteroventrally at tip, also with slender posteroventral bristles, slender anteroventral bristles, longer ventral bristles and short anterodorsal bristles. Front tibiae with short anterodorsal bristles, longer and stronger posterodorsals, short haired in front, long haired behind and below. Hind tibiae pennate dorsally for entire length with long antero- and posterodorsal bristles, fairly strong anteroventrals and with long bristly hairs below. Front basitarsi with short anterodorsal, antero- and posteroventral bristles; hind tarsi with series of long bristles all around, longest above, other tarsal segments on front and hind legs with rather long bristles above and very short bristles below.

Wings: dark brown, both branches of discal vein abbreviated, angle of costal fork a little less than 90°, upper branch of fork almost straight. Anal vein distinct to margin. Halteres dark brown.

♀: Similar to male, but frons broader, body hairs and bristles shorter. Legs as follows: front femora pennate above on basal two-thirds and below on basal third; mid and hind femora pennate above and below on entire length; front tibiae pennate above; mid tibiae pennate above and below for entire length; hind tibiae pennate above for entire length, short pennate below on distal half; all tarsi pennate above. The pennation is rather long but on the mid and hind tibiae there is also some short pennation anterior to the long pennation above. All leg bristles reduced in length, but bristles rather long and strong beneath mid tibiae.

Length (body): 5 mm.

This species may be distinguished at once from other species in the group by the lyre-shaped markings on the thorax. The 4 females from Rhodesia differ very slightly from the Kenya females in having the base of the abdomen yellowish, the tip of the upper branch of the cubital fork very slightly upcurved and the anterior pennation on the hind tibiae above a little longer. However the males are identical except that the base of the abdomen is more yellowish; there are no differences in genitalia. Professor LINDNER made the following interesting observation when collecting this species. "The resting position of both sexes is very characteristic. They sit with wings folded over the back and at the same time the anterior and median pairs of legs are extended forward at an angle so that the legs on each side lie very close together. The hind legs lie close to the abdomen" (see fig. 21 a).

Hilara philina Speiser 1910 (SJÖSTEDT's Kilimanjaro-Meru-Exped. 10 [4], p. 108).

1 ♂, 1 ♀, Tanganyika, Kilimanjaro, 1.–4. II. 1959, 3.500 m.

Described by SPEISER from both sexes, collected on Mt. Kilimanjaro in February. I have examined a female syntype kindly loaned by Dr. H. SCHUMANN from the Zoologisches Museum, Berlin.

Hilara sp.

1 ♀, South Africa, Kapstadt (Capetown), 13. X.–7. XI. 1958.

A female representing a third species of *Hilara* was taken, but without associated males a determination or description is inadvisable in this difficult genus.

Hilarempis msingi **n. sp.**

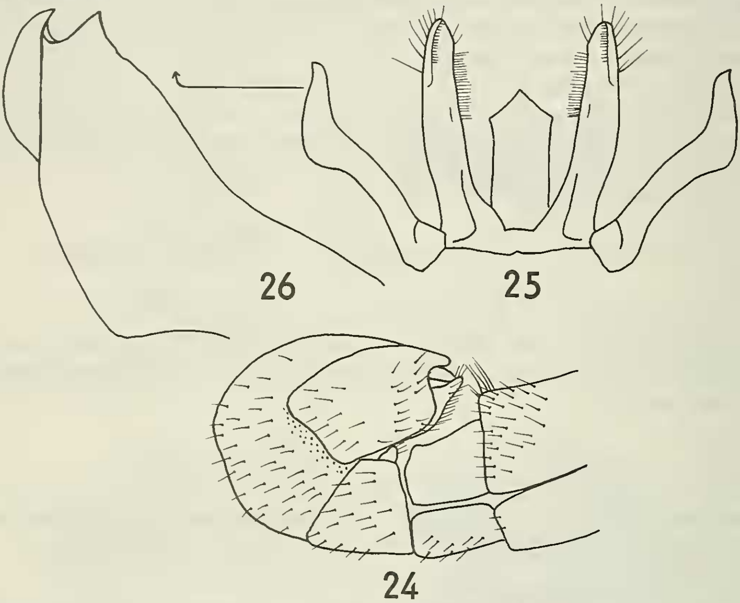
1 ♂ (holotype), 1 ♂, 1 ♀ (paratypes), Tanganyika, Msingi, 1.–19. V. 1952.

♂: Head: heavily dusted brownish, but face greyer with narrow dull black margins, frons except for an inverted triangle above antennae with broad dull black margins, almost touching in middle, ocellar triangle completely dull black and occiput dull black on narrow postocular margins. Frons about 3 times width of an ocellus with a row of outcurved orbital bristly hairs. Face a little broader than frons and widening slightly below. Ocellar triangle with a pair of widely divergent outcurved bristles. Occiput mostly dark haired with a few pale hairs below immediately behind mouth and a few more below neck. Antennae blackish, first segment longer than the second segment and hairy above and below distally; second segment roundish with a circlet of hairs distally; third segment pointed, about $1^1/_2$ times length of first and second segments together; terminal style about half length of third antennal segment. Proboscis dark brown, a little more than twice as long as head height. Palpi yellowish-brown, long, slender with long pale hairs below.

Thorax: dull blackish but heavily greyish around margins and with a brownish stripe under the acrostichals which broadens laterally over prescutellar depression and with two abbreviated brown stripes under dorsocentrals, beginning at middle of thorax and widening onto prescutellar depression. Acrostichals short and hair-like, irregularly bi-quadriserial and becoming longer posteriorly. Dorsocentrals uniserial similar to

acrostichals in size, but becoming distinct bristles posteriorly. Humeri with numerous long hairs; two stronger notopleurals with a weaker bristle below and numerous hairs in front; numerous hairs in supra-alar position with a posterior bristle before postalar callus; a postalar bristle and hair present. Scutellum heavily greyish dusted with 6 marginal bristles, the apical pair strongest and crossing, the outer pairs weaker. Pleurae heavily greyish dusted, sternopleuron a little brownish on disc anteriorly. Prothoracic sternum with pale hairs above and with a few pale hairs below, between front coxae. Episternum with pale hairs. Prothoracic collar with a row of short pale bristles and a long yellow outer bristle on each side. Mesopleuron with a few hairs on posterior margin, pleurae otherwise bare.

Abdomen: dark, dusted greyish/brownish, with short sparse pale hairs and some longer pale hairs laterally on first two segments. Genitalia (figs. 24—26) brownish.



Figs. 24—26. Genitalia of *Hilarempis msingi* n. sp.; 24, macerated genitalia in situ; 25, epandrium and cerci; 26, enlarged detail of tip of cercus.

Legs: dark brown, yellowish about knees. Coxae pale haired, front and mid coxae with one or two black bristles below and hind coxae with two black bristles on outer face. Front femora with weak anteroventral bristles; mid femora with short black anteroventral bristles and weaker posteroventral bristles. Hind femora with short anteroventral bristles. Hind tibiae with short anteroventrals on distal half with a very slightly more dorsal bristle towards tip (on the paratype ♂ this is the only distinct bristle present anteroventrally); with weak dorsal bristles and some short bristles about tip. Legs otherwise without distinct bristles except for very short ones below basitarsi and about tips of all tarsal segments.

Wings: light brown with venation typical of the genus. Halteres yellow with base of knob somewhat darkened.

♀: Similar to male, but much greyer; the frons is light grey except for very narrow dull black orbital bands, the thorax is grey with a narrow dull black stripe between the acrostichals and each dorsocentral series and a broad black stripe on each side. The wings are almost clear.

Length (body): 5.5 mm.

This species resembles *H. breviseta* Smith (1967) in having orbits, vertex, ocellar triangle and narrow postocular bands all velvety black; and legs with bristles beneath the femora. However *H. msingi* is a greyer species with legs darker and longer haired and the bristles beneath the femora are slender, not short and thick. and are distributed along the femur not confined to the distal half; the wings in the male are distinctly brownish-tinged.

Hemerodromiinae

Drymodromia sp.

1 ♂, 1 ♀ South Africa, Kirstenbosch, Kapstadt (Capetown), 13. X.–7. XI. 1958 (E. Lindner); 2 ♂♂, Kapstadt, 1958 (E. Lindner).

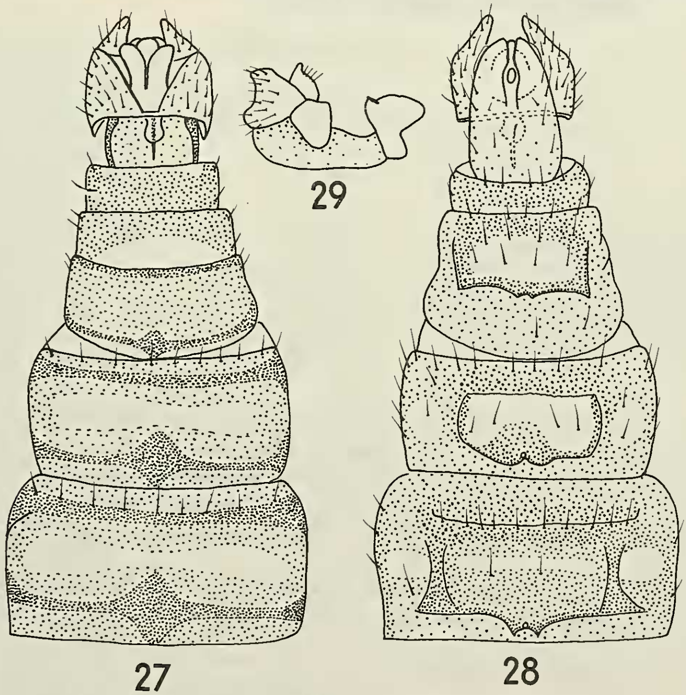
These specimens are conspecific with a South African species which I shall describe in my forthcoming monograph.

Clinocerinae

Rubistella mitis Jones 1940 (Ruwenzori Expedition 1934–35. II, 5, p. 286)

1 ♂, Tanganyika, Makoa, 22.–23. II. 1952.

Jones erected the genus *Rubistella* to receive this species described from the Ruwenzori Range, Namwamba Valley, 6500 feet; Kigezi district, Mt. Sabinio, 7000 feet, and Mt. Mgahinga, 8000 feet (all in Uganda) and Mt. Elgon, 8500 feet in Kenya. Although males were present in the type series Jones did not figure the genitalia of this sex. I have dissected a male paratype and the present specimen, find the genitalia identical and figure the abdomen and genitalia here (figs. 27–29). The abdomen is remarkable in being only thinly sclerotised in transverse bands giving it a ribbed appearance as illustrated.



Figs. 27—29. Abdomen and genitalia of *Rubistella mitis* Jones.
27, abdomen, dorsal view; 28, same, ventral view; 29, genitalia, lateral view

Rubistella sp.

1 ♀, South Africa, Kapstadt (Capetown), 13. X.–7. XI. 1958.

This female resembles the females of some undescribed South African species.

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